

anti-DT IgG titer in 5 of 5 animals. Thus it appears that bacterial DNA containing appropriate motifs such as CPGs (6KD) can be used as adjuvant to enhance delivery of antigen through the skin for induction of antigen specific antibody responses.

Page 51, delete the first paragraph starting on line 5 and replace it with the following:

(1.2) The transcutaneous effect of transcutaneous immunization can also be detected by T-cell proliferation. BALB/c mice 6 to 8 weeks of age were shaved and anesthetized as described above for the "immunization procedure". On the day of immunization the backs of the mice were wiped with isopropanol. After the alcohol had evaporated (approximately 5 minutes), 100 μ l of phosphate buffered saline (PBS) containing 100 μ g of DNA (CpG1 or CpG2) and 100 μ g of diphtheria toxoid (DT) was applied to the back for 90 to 120 minutes. Oligonucleotides were synthesized by Oligos Etc with a phosphorothioate backbone to improve stability. Removal of excess antigen was conducted as described in the "immunization procedure." The immunization was repeated 4 and 8 weeks later. Twelve weeks after the primary immunization draining (inguinal) LNs were removed and pooled from five immunized animals. The capacity to proliferate in response to media or antigen (DT) was assessed in a standard 4 day proliferation assay using 3-H incorporation as a readout. The results are shown in Table 7B. Co-administration of DT and a DNA sequence containing an unmethylated CpG dinucleotide flanked by two 5' purines and two 3' pyrimidines (SEQ ID NO:2) resulted in a detectable increase in the antigen specific proliferative response. Thus it appears that bacterial DNA containing appropriate motifs can be used as adjuvant to enhance delivery of antigen through the skin for induction of proliferative responses.

Page 59, delete the third paragraph starting on line 22 and replace it with the following:

(1.3) Co-administration of SLA and CpG1 (immunostimulatory DNA containing an unmethylated CpG dinucleotide flanked by two 5' purines and two 3' pyrimidines – SEQ ID NO:2) or CT resulted in a detectable increase in the antigen specific proliferative response. However, the antigen (SLA) specific proliferative response was approximately